IV. Regional And Local Case Studies

The examples listed here are intended to provide agencies, organizations, and municipalities with information about creative approaches and models that can be transferred throughout the region.

The following case studies were derived from interviews with local officials and regional agencies and conservation organizations, as well as through a review of bylaws, regulations, and newspaper accounts of recent town initiatives. Each section highlights some of the innovative regulatory and nonregulatory approaches to natural resource protection. Regulatory approaches include case studies highlighted from zoning bylaws, wetland bylaws and regulations, and planning board rules and regulations in the five ACEC communities. Nonregulatory strategies include innovative tools for water supply, water quality, shellfish resources, open space, and growth management. In addition, a section for *Technical Assistance and Information Sharing* is included to highlight particularly useful resources available for further information. The examples listed here are intended to provide agencies, organizations, and municipalities with information about creative approaches and models that can be transferred throughout the region. Please contact the organizations or agencies (Appendix A) identified at the end of each case study for more information.

WATERSHED PROTECTION

Parker River Watershed Nonpoint Source Monitoring and Analysis

The Massachusetts Office of Coastal Zone Management (CZM) is leading an effort with other agencies and organizations to develop *a Nonpoint Source (NPS) Monitoring and Analysis Framework*. This framework creates tools for using water quality monitoring data and land use information to evaluate NPS control efforts in coastal watersheds. The pilot project currently underway in the Parker River Watershed will develop tools to link land use trends and patterns, chemical and biological data from aquatic sources, and information about NPS pollution control methods. Ultimately, Geographic Information System (GIS) tools will be developed that will help coastal managers to: 1) assess NPS control methods and their effectiveness in protecting and restoring the condition of coastal aquatic resources such as estuaries, rivers, and salt marsh habitats; 2) identify relationships between development patterns and their impacts on aquatic resources; and 3) determine areas at risk or locations where monitoring stations should be sited. **Contact: Massachusetts Office of Coastal Zone Management.**

WATER SUPPLY

Innovative Water Conservation Techniques

The Town of Ipswich has taken positive steps toward water conservation by completing a leak detection study in 1997, which discovered a 20% loss and resulted in repairs that amounted to water savings of 170,000 gallons per day. In addition, the town has attempted to comply with the state recommendation of 100% metering by contracting for and replacing meters with an automatic metering system that cuts down on unaccounted water. During periods of drought and water shortage, the town has successfully responded with restrictions on water use. When restrictions were imposed in 1997, the town strictly limited the hours of outdoor water use to night-time hours and required hand-watering only, which proved effective in reducing summertime peak water demand. In

1998, the Ipswich River Watershed Association (IRWA) wrote an effective report addressing water supply issues for the Town of Ipswich (IRWA 1998). Recommendations were written to improve water efficiency, the results of which helped motivate a town-wide educational campaign. IRWA also encouraged other remedies, such as: 1) town subsidies for water efficient plumbing; 2) water pricing to reward low-volume use and discourage high water use by implementing an "inclined block structure" rather than a flat rate; 3) continued aggressive water restrictions, enforcement, and establishment of non-criminal disposition and citations; 4) subdivision guidelines for water-efficient plants, limitations on lawn size, and landscaping with natural plantings; and 5) environmentally designed golf courses (IRWA 1998).
Contact: Ipswich River Watershed Association.

WATER QUALITY

Drainage Plans for Approval Not Required Lots

Those seeking permits for new homes in Gloucester now have to submit detailed plans of how their projects will affect drainage in a given area. The change to the zoning ordinance in August, 2000 is designed to stem unexpected water runoff onto neighboring properties as drainage and grading plans will now be approved by the city's director of public works. These plans must show how runoff and grading will be affected by a given project and must be approved before a building permit can be issued. However, it is the public works director's discretion whether to exempt certain project proponents from submitting a plan if the project will not affect drainage or grading in a given area. The plans must also detail the extent of woodlands, trees, and ledge composition in addition to drainage and grading levels. This zoning ordinance change gives Gloucester the opportunity to review single family home projects categorized as Approval Not Required (ANR). ANR lots traditionally do not require review or approval by a planning board as they have existing frontage on a town road or on an approved subdivision road. By requiring drainage plans, the building inspector can now review these plans to ensure adequate stormwater management.
Contact: Gloucester Planning Department.

Those seeking permits for new homes in Gloucester now have to submit detailed plans of how their projects will affect drainage in a given area.

Stormwater Performance Bond

Most ACEC communities have subdivision regulations requiring that a stormwater management plan include compliance with state stormwater standards. In addition to the typical best management practices (BMPs) for water quantity, the regulations require BMPs that reduce pollutants and sediments in surface runoff to reduce negative water quality impacts from new growth and development. The conservation commission has this jurisdiction for water quality under the Wetlands Protection Act, but only for specific resource areas and associated buffers.

A unique section found in both the Rowley and Newbury Planning Board Regulations that extends review of water *quantity* to address water *quality* concerns is the requirement of a separate stormwater performance bond. Usually, performance bonds are posted by developers to cover the road and drainage structures until the subdivision is constructed or the road and utilities are accepted by the town. The stormwater performance bond focuses on the construction of stormwater mechanisms and more importantly, includes follow-up water quality monitoring to assure that these practices are working effectively. If monitoring indicates that the BMPs do not meet water quality expectations, the bond will include funding to improve the BMPs until results comply with

stormwater standards. With Rowley and Newbury adopting these unique water quality stormwater standards under planning board regulations, the areas just outside the conservation commission jurisdiction (but equally important to ACEC protection) can now be reviewed by the planning board.
Contact: Coastal Zone Management, North Shore Regional Office.

Wastewater Management Overlay District

In order to manage growth due to the proposed new sewer line between Essex and Gloucester, the City of Gloucester has approved a West Gloucester Overlay District that places restrictions on growth within a 3,301 acre area. The district will prevent immediate development of 1,326 lots in these areas. Subdivisions that result in four or more lots will require the approval of the planning board through the special permit process and are prohibited from connecting to the city sewer. Subdivisions, therefore, must provide for the installation of septic systems that meet Title V standards and will not have access to the sewer lines for five years unless their septic system fails. The district will remain in place for five years during which time a permanent growth management plan will be developed. This wastewater management overlay district is an innovative approach taken by the city to plan for growth.
Contact: Gloucester Planning Department.

As part of the plan, failing septic systems within 50 feet of a stormdrain that discharge into nearby waterways were identified and targeted for future remediation.

Wastewater Management Plan

A 1996 Wastewater Management Plan was written to address issues stemming from water quality concerns and problems with failing septic systems in Gloucester. As part of the plan, failing septic systems within 50 feet of a stormdrain that discharge into nearby waterways were identified and targeted for future remediation. Along Walker Creek (which is within the boundary of the ACEC), 85-90% of tested systems were shown to fail. As part of the plan, Gloucester will provide low cost loans for improving existing septic systems that are not tied into the sewer. The management plan has proven successful in identifying failing septic systems in need of upgrades and for providing information to determine how much of the town is to be sewered.
Contact: Gloucester Board of Health.

Agriculture Best Management Practices

A local diary cow farming family has turned its land and operations into a model for agricultural management in order to prevent fecal coliform in manure from reaching riverways and eventually ACEC coastal waters. Since 1995, the Herricks of Rowley have partnered with local officials, state and federal agencies, and conservation organizations to discover the best methods to reduce agricultural runoff pollutants and to fund the design and installation of some "best management practices" (BMPs). To assist the family with this important environmental effort, a support team was assembled including the Natural Resources Conservation Service, CZM, the North Shore Office of Massachusetts Audubon Society, and the Parker River Watershed Team. The project involves BMPS that fence cows out of the wetlands, restore vegetation so the wetlands can act as a natural pollutant filtration system, create a system of swales and berms to act as settling basins that remove contaminants before the runoff eventually reaches the Mill River, and replace roadway culverts to restore flow between the wetlands. Both pre- and post water quality monitoring data is used to determine the effectiveness of these innovative BMPs. Outreach materials are being developed to educate farmers and stable owners about the findings of BMP evaluations, funding opportunities, availability for technical assistance, and the successful partnership approach.
Contact: Coastal Zone Management, North Shore Regional Office.

Coastal Pollution Control Committee

The Coastal Pollution Control Committee (CPCC) was created in 1991 by the Ipswich Board of Selectmen to identify, evaluate, and recommend actions designed to reduce and control levels of fecal coliform bacteria affecting the coastal area of Ipswich. The Committee produced a final report, which identified the primary sources, transport mechanisms, and impacts of coastal pollution from fecal coliform and suggested ways to address these impacts (ICPCC 1995).

The CPCC recommended in their 1995 report that a stormwater management plan be developed to combat the most significant source of pollution to coastal waters. The draft plan is based on more than 1000 water samples identifying sources of pollution in town. As part of the 1995 final report, the town developed a spreadsheet of prioritized recommendations; many of the recommendations have since been implemented. The CPCC has been successful in addressing and improving upon: 1) septic failures; 2) farm waste management practices and pet waste practices; 3) sewage treatment plant upgrades; 4) harbormaster/waterways regulations to better address discharge wastes and other pollution from boats; 5) stormwater requirements within local subdivision regulations and the special permit process which are designed to meet the state water quality standards; and 6) modifications to the existing wetland regulations to expand the no disturbance/no build regulations in buffer zones to the ACEC and coastal tributaries.

The stormwater management plan and CPCC report has resulted in dramatic improvements in water quality in Ipswich waterways. Evidence of success is apparent in the re-opening of two clam flats in Fox and Treadwell Island Creek that have been historically closed to harvesting by pollution.

Selectmen have gone through the report to identify recommendations still in need of action. To help evaluate the success of best management plans that have been put in place and to help better understand how money is being spent, the Selectmen are recommending follow-up water quality monitoring to determine results of the management planning.
Contact: Ipswich Conservation Office.

Stormdrain Stenciling

With help from the Eight Towns and the Bay Committee, students and community groups in the ACEC Towns of Ipswich and Gloucester have stenciled the message "Don't dump. Drains to river/harbor/marsh" next to municipal storm drains. Storm drain stenciling is a fun and hands-on way to educate others and to promote voluntary action for pollution prevention. The stenciled messages, painted next to a municipal storm drain, alerts residents to the dangers of dumping items such as motor oil, pet waste, antifreeze, and trash into storm drains, where they are transported to local streams, rivers, and coastal waterways.

The stencils, featuring both the message and a fish graphic, are available on a loan basis to interested organizations and schools, free of charge, along with an information resource kit. In conjunction with the stenciling activity, many groups distribute an information sheet that lists items typically placed in storm drains, some of the effects these items have on marine life and water quality, and suggested solutions for addressing the problems. Studies have shown that stenciling works to raise awareness of pollution and stormwater runoff.
Contact: Eight Towns and the Bay Committee.

The Committee produced a final report, which identified the primary sources, transport mechanisms, and impacts of coastal pollution from fecal coliform and suggested ways to address these impacts

photo by Tom Kleindinst

Optical Brightener Handbook

Optical brighteners are fluorescent white dyes that are added to almost all laundry detergents to help make clothes look brighter. Because these dyes are a component of laundry effluent, they are generally found in domestic wastewater and can therefore enter the subsurface environment as a result of ineffective sewage treatment. Removal of the optical brightener dyes in groundwater is by adsorption (or attachment) onto soil and organic materials; in surface waters they are removed by adsorption and photo decay. Since adsorption is a critically important process in the performance of septic systems, the recovery of these dyes in nearby waters (either surface or groundwater) indicates ineffective natural cleansing of wastewater.

Two groups in the ACEC, the Ipswich Coastal Pollution Control Committee and the Gloucester Shellfish Department/Shellfish Advisory Commission, have found that Optical Brightener testing when done in combination with a larger sampling program reliably helps identify faulty septic systems, storm drain cross-connections, and human/animal waste differentiation. These two organizations produced an Optical Brightener Handbook that can be used by other water quality monitoring groups.

Contact: Eight Towns and the Bay Committee website at http://www.thecompass.com/8TB.

Water Quality Monitoring and Presentations

The Parker River Clean Water Association (PRCWA) began collecting water quality samples once a month throughout the Parker River Watershed beginning in the spring and continuing through the fall of 2000. Information was collected for temperature, dissolved oxygen, pH, fecal coliform, nutrients, turbidity, depth, and velocity at each sample site. An annual report summarizing the data was written and results were presented to conservation commissions in the towns of Newburyport, Newbury, and Rowley. These presentations have improved communications between PRCWA and conservation commissions in the watershed, and have encouraged local officials to seek public support for setting up additional water quality sampling sites in their town. PRCWA plans on continuing this sampling schedule and follow-up presentations to more watershed communities.

Contact: Parker River Clean Water Association.

Regional Boat Waste Management

Harbormasters from Newbury, Rowley, Ipswich, Essex, Gloucester, and Rockport convened in spring, 2000 to begin a process of coordinating pumpout facility activities on a regional basis. By working collectively, the harbormasters were quickly able to assess the capacity of pumpout boats and shoreside facilities in the region and develop a coverage strategy to best serve boaters throughout the area. For example, Ipswich agreed to take its new pumpout boat to Essex Bay to provide boaters with pumpout services that hadn't been accessible in years past. As boaters become more aware of the increased pumpout coverage, less waste will be discharged directly into ACEC waters of Plum Island Sound and Essex Bay.

With coordination from CZM, the Harbormasters also assisted in developing information for public education and pumpout promotion materials for distribution in the summer of 2001. This outreach campaign is based on information needs identified by the harbormasters, includes formats most usable by boaters in the region, and incorporates ways to build a regional identity for the ACEC waters. Concurrently with these efforts, CZM conducted a boater

survey to gather information about pumpout use and how it could be made more accessible. This information has been compiled into a Regional Boat Waste Pumpout Plan (Brown 2001) that promotes pumpout use through public education.

The boat waste management initiative serves as a model for promoting regional collaboration to assess and meet the needs of recreational boat users and provides an example of how municipalities can join forces to meet challenges through cooperation and planning. By working within a regional framework, services are better provided to a full spectrum of boaters regardless of jurisdictional boundaries.
Contact: Coastal Zone Management, North Shore Regional Office.

SHELLFISH RESOURCES

Marine Resource Advisory Board

The Rowley Marine Resource Advisory Board was appointed by the Board of Selectmen in August, 1999 to act as advisors for the Shellfish Commissioners, Shellfish Constable, and the Selectmen on the management of Rowley's marine resources, especially the clam flats, and to explore the viability of aquaculture for the town. With impetus from the Metropolitan Valley Planning Commission's (MVPC) shellfish enhancement project (see next case study), the board was established in response to concerns over shellfish declines and low commercial license sales.

The Advisory Board aims to: 1) develop a comprehensive long-term shellfish management plan; 2) research and implement feasibility studies to stabilize the fluctuations of the resource; 3) implement other marine resource aquaculture programs; 4) work in cooperation with neighboring ACEC towns trying to address similar aquaculture issues; 5) continue the shellfish enhancement program using nets and short-term predator control; and 6) develop a control program for existing flats (Mehaffey 2000a). Enforcement of the existing by-law concerning flat closures in over-harvested areas is another priority. The Marine Resource Advisory Board is a successful example of how a group of volunteers can organize, with the help of regional planning organizations, to address resource issues in their town and cooperatively with other towns throughout the ACEC.
Contact: Rowley Conservation Office.

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Shellfish Enhancement Project

A multi-year shellfish aquaculture research project was launched on the North Shore in 1995 by a partnership of the MVPC, Eight Towns and the Bay, the Northeast Massachusetts Aquaculture Center, and the municipalities of Gloucester, Rowley, and Ipswich. The goal of this project is to research the feasibility of rearing soft-shell clams for both private aquaculture and public stock enhancement by investigating two techniques of hatchery production and wild seed (or young clam) harvesting. Several types of experimental seed catching nets have been deployed at eight locations in Gloucester, Rowley, and Ipswich. The nets function by allowing clam larvae in the water column to settle and grow under the nets, while protecting them from predators. Based on previous research, it is expected that the nets will capture and protect many thousands of naturally produced young clams that would otherwise perish due to predation and other types of mortality. These clams can then be thinned and the excess transplanted to under-productive or non-productive shellfish areas.

Since the early 1990s, these shellfish enhancement efforts have resulted in an increase in take by both professional and recreational shellfishermen. This regional effort demonstrates an ongoing initiative that benefits local resources and economies while addressing management needs and reducing strain on over-harvested areas throughout the ACEC region.
Contact: Merrimack Valley Planning Commission.

WETLANDS

No Build/No Disturb Zone

Pursuant to the Ipswich Wetlands Protection Bylaw and Rules and Regulations, the Ipswich Conservation Commission has jurisdiction on land within 150 feet of the ACEC, which exceeds requirements of the state's wetlands regulations by adding an additional 50 feet to their review. Projects proposed in the area within 150 feet of the ACEC shall be required to demonstrate that potential impacts to the ACEC by the proposed project are mitigated. In evaluating the effect of activities proposed in this 150 foot buffer zone, the Commission is required to review short-term, long-term, and cumulative effects on adjacent resource areas. Any adverse effect shall be minimized through compliance with particular performance standards. As part of these performance standards, the Commission recently amended requirements of the No Build/No Disturb Zone. Wetlands regulations now establish a 50 foot No Disturbance Zone and a permanent 15 foot No Build Zone (landward of the No Disturb Zone) on all projects in the buffer zone, thus preventing building within 65 feet from a wetland resource area. The existing performance standards and potential modifications exceed the standards used by other towns in the ACEC and can serve as a useful model for implementation.
Contact: Ipswich Conservation Office.

Wetland Exclusion From Lot Area Calculations

Essex is the only town within the Parker River/Essex Bay ACEC that has succeeded in excluding 100% wetland area from the lot area definition.

The lot area definition within the Essex Zoning Bylaw was recently amended (annual town meeting - May 2, 2000) to add that bogs, tidal marshlands, and other forms of wetland be excluded from lot area calculations. This new definition will affect new subdivisions by specifically requiring only the area of uplands to count toward minimum lot size, thereby reducing the number of lots that are predominantly wetlands and ultimately reducing the number of dividable parcels. Essex is the only town within the Parker River/Essex Bay ACEC that has succeeded in excluding 100% wetland area from the lot area definition. Many other towns have only been able to exclude a certain percentage, such as within the Agricultural-Residential District Regulations of Newbury, which require not more than 20% of the minimum lot area to be in wetlands and similarly, in the Rowley Floodplain and Watershed Protection District Regulations, which require not more than 25% of the lot area to be floodplain or watershed protection land. With the 100% exclusion of wetlands in lot area calculations, Essex has taken an innovative approach for managing growth adjacent to sensitive wetland resources.
Contact: Essex Conservation Commission.

Wetland Performance Standards: 300 foot ACEC Buffer

The Gloucester General Wetlands Ordinance goes beyond the state's Wetlands Protection Act 100 foot buffer requirements by giving the conservation commission jurisdiction of a 300 foot buffer around the ACEC boundary. Within Section 12-10-1 of the Wetlands Ordinance, land extending 100 feet horizontally outward from the boundary of the ACEC, termed "Upland Edge,"

is referred to as a Resource Area and subject to protection under the article. Any activity proposed or undertaken within 200 feet horizontally outward from the Upland Edge is also subject to regulation. Certain performance standards are required, such as no vegetation cutting (other than existing lawns, flowers, vegetables, crops, and ornamental shrubs) within the Upland Edge, no additional impervious surface to land within the Upland Edge, and no components of any drainage system or septic system installed within 200 feet of the ACEC. The 300-foot jurisdictional area adjacent to the ACEC boundary is unique to Gloucester and is a significant regulatory step towards ACEC resource protection.

Contact: Gloucester Conservation Office.

Isolated Land Subject to Flooding

The Massachusetts Wetlands Protection Act defines isolated land subject to flooding as a wetland resource area, but many projects that alter less than the threshold limit would not be subject to review by the conservation commission or by the Department of Environmental Protection. In order to exert more authority over this type of resource area, the City of Gloucester recently passed an amendment to the General Wetlands Ordinance that reduces the state's threshold size from 5,000 to 2,500 square feet. The amendment stems from concern that these areas, once falling below the 5,000 square foot threshold for review, still serve valuable public interests such as pollution and storm damage prevention, surface and groundwater supply, and unique wildlife habitat. With the 2,500 square foot reduction in the threshold size now triggering review, there is an opportunity to ensure proper development and preservation of these isolated wetlands.

Contact: Gloucester Conservation Office.

Salt Marsh Science Classroom Project

Since 1996, students in grades 5-12 on the North Shore have been working with Massachusetts Audubon Society scientists to learn exciting and important information about salt marshes and Phragmites Australis (Common Reed), an invasive plant that grows in salt marshes. Some of the activities students have been involved with include: monitoring the growth of Phragmites in salt marshes; studying the effect of salinity levels on the growth of salt marsh vegetation; assessing tidal restrictions (places where natural tidal flow has been obstructed by human actions); and sampling fish above and below tidal restrictions to determine the impact of these restrictions on fish. Students and teachers from Pine Grove School in Rowley and Ipswich High Schools have been participating in the study. The information collected in this project helps scientists advise local, state, and federal agencies about how to protect and restore salt marshes (MAS 2001).

Contact: Massachusetts Audubon Society.

OPEN SPACE AND GROWTH MANAGEMENT

Land does not need to be developed to contribute financial resources, such as tax revenue, to the well-being of a community. A study by the Trust for Public Lands finds that while protecting open space costs money in the short-term, development ultimately means higher taxes in the long-term to maintain additional municipal services. Open space has long-term, positive, net fiscal benefits including savings on public service expenditures, enhanced property valuation, water resources protection, pollution control, hazard mitigation, and an improved bond rating (ECGA 1999). Open space also has a positive long-term

photo by Bruce Carlisle

Open space has long-term, positive, net fiscal benefits including savings on public service expenditures, enhanced property valuation, water resources protection, pollution control, hazard mitigation, and an improved bond rating.

net economic benefit for communities, including support for the tourist industry, creation of recreational opportunities, preservation of water-based industries, protection of the agricultural industry, and corporate retention and relocation (ECGA 1999). The case studies cited below are examples of how communities have tried to reach a balance between the protection of open space and the opportunity for appropriate growth and development.

The case studies cited below are examples of how communities have tried to reach a balance between the protection of open space and the opportunity for appropriate growth and development.

Growth Management Steering Committee

To address issues of growth management and loss of open space, the Town of Ipswich formed a Growth Management Steering Committee, which consists of 24 people representing diverse areas of interest and expertise in the town, including affordable housing, open space preservation, water resources protection, business, real estate development, and local government. This group began meeting monthly in August of 1999 and took as its mission the following:

> *To assess the current residential and commercial impacts upon the natural, constructed and municipal capabilities of the town, to anticipate the growth of such impacts, and to devise comprehensive municipal policies, techniques, and incentives – both voluntary and mandatory – that will guide the growth of Ipswich in a manner responsive to our Community Vision (Community Design Partnership 2000).*

The Committee also participated in the prioritization of open space parcels and sponsored three civic forums regarding the community's vision for its future. Forming committees such as these can benefit a town by encouraging cooperation, communication, and by building support for local growth management initiatives.

Contact: Ipswich Planning Department.

Open Space Inventories

Ipswich Inventory and Prioritization of Parcels

The Ipswich Open Space Committee obtained funds to identify and prioritize open space parcels based on a set of criteria used to assess resource values. Public water supply, marsh fringe, forest, wildlife habitat and corridors, scenic and cultural character, and contribution to recreational resources are some of the criteria being used to inventory the town's open space. The resulting inventory prioritizes parcels for protection and acquisition. This plan is being used to support the town's growth management plan and a $10 million bond authorization for the acquisition of open space. The list of priority open space properties is unique to the ACEC region and is on file at the town clerk's office.

Contact: Ipswich Planning Department.

Massachusetts Audubon Society's Critical Habitats and Open Spaces

The Massachusetts Audubon: North Shore (MAS:NS) office is developing a comprehensive inventory of important natural communities such as salt marsh, vernal pools, lakes and ponds, rivers and streams, and barrier beaches and dunes on Cape Ann. As part of this inventory, MAS:NS is identifying unprotected open space in Rockport and Gloucester and highlighting areas without adequate resource protection.

Volunteer support for the inventory is critical to its success from beginning to end. After working with staff biologists to determine criteria for each natural community, MAS:NS staff publicized the project to enlist the help of regional naturalists and environmental groups and announced the project in The Gloucester Daily Times to invite all citizens to participate in the inventory.

After volunteers completed inventories and verified sites with MAS:NS staff

biologists, the identified natural community's flora and fauna were catalogued and mapped to show where Cape Ann critical habitats are located. Final products are being used to hold workshops and conduct field trips for municipal officials and interested citizens to increase their enthusiasm and understanding for protecting the nature of Cape Ann. This project illustrates a successful way to involve the public in identifying unprotected, ecologically valuable land for future planning efforts.
Contact: Massachusetts Audubon Society.

Open Space Acquisition

Rowley Land Acquisition: Hunsley Hills

The 104 acre parcel known as Hunsley Hills is one of the largest undeveloped pieces of land in Rowley and is now permanently protected because of actions taken at town meeting to approve the property purchase at a value of $1.25 million. The town now owns and manages the property in perpetuity for the purposes of water supply and watershed protection, conservation, and low-impact recreation. Protection of Hunsley Hills will create a contiguous corridor of conservation land covering nearly 500 acres made up of an assemblage of land owned by the conservation commission, Rowley Water Department, Girl Scout Camp, other town-owned land, and land donated by developers (Trust for Public Land 2000).

Hunsley Hills was identified as a top priority for protection in Rowley's 1998-2003 Open Space and Recreation Plan. The success of the land acquisition project can be credited to the support and leverage that the town gained from conservation groups, funding sources, and state agencies with expertise in marketing and land acquisition techniques. A strong coalition supporting the acquisition project was built by meeting with the planning board, finance committee members, water board, conservation commission, and board of selectmen. Using the power of public media, such as letters to the editor or press releases, the open space committee publicly advertised and marketed the project with facts on the land to be acquired, partners involved, and estimated costs. From its experience, the committee learned the value of preparing a concise multimedia presentation for town meeting that included graphs, maps, photographs, and figures for cost estimates, as well as facts addressing community concerns, such as taxes, traffic, water quality, building rates, impacts on schools, and recreational opportunities.

Rowley's Open Space Committee has become even more empowered with the aid of a Conservation Land Fund that is augmented yearly with $20,000 from the town (per request) and brings the potential for leveraging other sources of matching funds. Approximately $100,000 was spent recently for acquisitions totaling 125 acres. This funding source, combined with the collaborative efforts illustrated in the Hunsley Hill acquisition process, have proven to be effective tools for protecting and managing open space. Another success from the Hunsley Hills acquisition project is that the town's Finance Committee has decided to allocate $50,000 toward acquisition each year from its operating budget.
Contact: Rowley Open Space Committee.

Ipswich Land Acquisition: $10 Million Bond Authorization

In an effort to preserve open space, protect water supply, and provide recreational opportunities, a majority of voters at the Ipswich annual town meeting (April 2000) agreed to borrow up to $10 million to protect open space either by outright acquisition or by obtaining a deed restriction on its use (Laidler 2000). The town showed tremendous commitment to preserving open

The success of the land acquisition project can be credited to the support and leverage that the town gained from conservation groups, funding sources, and state agencies with expertise in marketing and land acquisition techniques.

Much of the public support for the bond was generated from a series of civic forums that the town held to help the community envision its future.

space by creating this large fund with a Proposition 2½ override. Much of the public support for the bond was generated from a series of civic forums that the town held to help the community envision its future.

The measure names the Selectmen as the authority that decides when to borrow the money for land purchases and when to sell portions of open space parcels with proceeds going toward debt service on the bond. Thus, the fund gives the town the flexibility to act quickly and compete with other buyers when valuable parcels become available, particularly Chapter 61A lands, which are part of a tax reduction program for agricultural lands. If the town does not necessarily want to take full title to the land in order to protect it, less money can be used by purchasing conservation easements and development rights. Several committees are involved in selecting properties the town tries to buy, while the open space committee is leading an effort to prioritize properties and determine the best forms of protection.
Contact: Ipswich Planning Department.

Conservation Restrictions

Conservation Restrictions (CRs) are legal agreements between a landowner and a conservation organization or government agency that extinguish some or all development rights over a property. Even though CRs usually do not open land for public use, they serve valuable public interests such as protecting scenic byways, wildlife habitat, and productive farmland. CRs may bring property tax relief and income real estate tax benefits while keeping family land intact, preserving critical open space, and setting examples for neighborhood preservation.

Rowley Conservation Restriction: Minister's Woodlot

The Rowley Historical Society believes the 22 acre "Minister's Woodlot" is one of the oldest unchanged private lots in continuous use in America. This forested portion of land provides an important buffer between Route 1A and the ecologically sensitive ACEC salt marsh. A proposed development on 2 1/2 acres threatened to change the use and alter the landscape after 340 years. In response, the Town of Rowley, the Massachusetts Audubon Society, Essex County Greenbelt Association, Rowley Realty, the Rowley Historical Society, and an anonymous donor joined forces to secure a payment of $110,000 to the church trustees in order to obtain a Conservation Restriction (CR) on the entire lot (Blake, 2000). The church retains ownership and management responsibilities of the property, which will be accessible to the public for passive recreation, while the town and the Massachusetts Audubon Society make certain that the land remains protected. Seeing as the lot is bounded almost entirely by other conservation land, the procurement of the conservation restriction has also helped establish wildlife corridors and prevent fragmentation of open space.

This case study illustrates the importance of protecting land with multiple resource values, forming a collaboration among interested parties and landowners, and obtaining the technical assistance and support of land trusts and organizations with professional staff.
Contact: Rowley Conservation Office.

Community Planning Forums

Gloucester Community Development Plan 2000 Committee

To address their city's future, Gloucester volunteers and city staff are in the process of writing a 10 year community development plan. The Community Development Plan 2000 Committee has been gathering public opinion about

concerns in Gloucester through a series of meetings and have spent nearly a year collecting data and information to support the plan. Thus far, Gloucester residents report that, "protecting natural areas – from shorelines to woods, marshes to meadows – is a chief concern of those who live here" (GDT 2000). Group discussions about protecting open space focus on privately held tracts of land that could be developed, but presently remain undisturbed. Planning ideas for these tracts of land include acquisition and conservation easements or restrictions. The Community Development Plan is viewed by residents as an opportunity to tackle important natural resource issues.
Contact: Gloucester Planning Board.

The Future of Ipswich Planning Project

The *Future of Ipswich Planning Project* began in 1999 as a town initiative to respond to citizen concerns about trends in the amount, location, type, and design of new development and growth in the town. Officials decided to provide limited funding for a consultant team to begin a growth management planning process with a visioning component and to prepare studies on open space issues. The goal of this planning project is to help the residents, business owners, and property-owners in Ipswich agree on a vision for the town's future, a strategy to make the vision a reality, and action steps to implement the strategy. A visioning civic forum was held in January, 1999 to elicit elements for a Vision Statement that the town can use as a goal when developing its growth management plan. By developing and implementing a growth management plan that directs and shapes change to enhance and promote the town's goals, Ipswich will be able to protect and preserve the places and characteristics that its citizens cherish. The creation of a vision for the future begins the process and starts the town-wide conversation about how to make the vision a reality.
Contact: Ipswich Planning Department.

The goal of this planning project is to help the residents, business owners, and property-owners in Ipswich agree on a vision for the town's future, a strategy to make the vision a reality, and action steps to implement the strategy.

Land Protection Assistance

Great Marsh Land Protection Assistance

As part of Massachusetts Audubon Society's Great Marsh Initiative, the Land Protection Team brings together agencies and conservation organizations to work collectively to restore and protect open space in towns from Salisbury to Gloucester (including all five ACEC towns). The Team is committed to helping individuals, local governments, and public access groups acquire, protect, and manage land. As part of this effort, the Team has created an *Assistance and Technical Services Request Form* that encourages all communities, groups, and individuals to request assistance from the Land Protection Team. Assistance is available in the following areas: acquisition, planning and assessment, outreach and education, resource inventories, and ACEC boundary, project review, and resource mapping questions.

After a developer of the Winchester Farm Estates in Ipswich submitted a design for a 20-lot standard subdivision in 1997, he was encouraged by the town's planning board to consider an open space residential design as the property contains over 36 acres of woods, wetlands, and a cranberry bog. In response to a May 1999 request, the Land Protection Team compiled a list of design firms and individuals who have experience with open space residential design development from a member of the Ipswich Open Space Committee. After receiving a recommended list from the Land Protection Team, the developer hired Randall Arendt, a nationally known open space designer, to develop a plan for the property. The plan now locates 20 houses on 15 acres of land, leaving 20 acres of preserved cranberry bogs, forested knolls, and all the property's wetlands. A present trail system will take residents from their homes to the preserved areas

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and into the Willowdale State Forest. The conservation land will be deeded either to the town or a conservation land trust like Essex County Greenbelt Association. Although lot sizes will be smaller than in a conventional subdivision, the developer is allowed to build more houses with greater density under the town's open space zoning bylaw. Arendt's development plan also calls for an innovative "natural drainage system" which uses vegetated retention ponds rather than traditional pipes, curbs, and catch basins. This plan is being praised by multiple stakeholders including the property owner, abutters, the planning board, and the developer.
Contact: Ipswich Planning Department, Masschusetts Audubon Society.

Essex County Greenbelt Association Land Protection Programs

The Essex County Greenbelt Association is a non-profit organization dedicated to preserving the open space heritage of Essex County. Since 1961, Greenbelt's land programs have helped local communities and landowners to safeguard ecosystems, foster agricultural usage, and protect scenic vistas and special natural features. One of the organization's goals is to create a network of "greenbelts" consisting of river, coastal systems, visually intact landscapes, and trail and other natural corridors. Greenbelt offers information outlining protection measures and options that would best suit landowners and they have been successful in protecting nearly 10,000 acres of land in Essex County. Throughout the interviews for this assessment, many local officials indicated that Greenbelt is a valuable resource for information dissemination and is highly successful in negotiating open space acquisitions.
Contact: Essex County Greenbelt Association.

Grow Smart North Shore

At the request of the MAPC North Shore Task Force, a team of twelve graduate students at the Harvard Graduate School of Design investigated ways that new patterns of growth could be encouraged in North Shore communities. The goal of the study was to identify ways that the region can promote smarter development patterns with strategies and investments that preserve the area's remaining open space and rural character while reinforcing its economy and quality of life. Through work with local officials and organized public workshops, the team produced a document, containing regional maps, entitled Grow Smart North Shore that describes an open space protection strategy, ideas for improving patterns of development, a buildout analysis, and suggestions for implementing land protection strategies (HUGSD 1999). In preparing recommendations for implementation, the team sought to: 1) consider the needs and character of the region's resources and people; 2) consider the needs of the regional ecology; 3) address the issue of water quality and quantity; 4) address the rich cultural heritage of the region; and 5) create a realistic, regional open space reserve on the North Shore and Cape Ann (HUGSD 1999).

Analyzing the distribution of regional resources ultimately led to the identification of certain key areas in need of immediate preservation (for a series of maps highlighting these areas see the final report cited as HUGSD 1999). Input from formal and informal meetings with North Shore residents was critical in formulating the proposals in Grow Smart North Shore and important first steps for attaining regional cooperation.
Contact: Metropolitan Area Planning Commission (MAPC).

Green Neighborhoods Alliance: Open Space Residential Design

Through a collaborative design process, a diverse group of North Shore constituencies known as the "Green Neighborhoods Alliance" have worked to produce and promote an Open Space Residential Design bylaw. Otherwise known as Conservation Subdivision Design and modeled after the work of Randall Arendt, this technique aims at building desirable neighborhoods by maximizing the amount of preserved open space without reducing the number of homes built. The Alliance is the first land use partnership in Northeast Massachusetts to successfully include local and state governments, regional planning agencies, conservation organizations, developers, engineers, and realtors.

The process uses the following four steps to balance environmental and development needs during subdivision planning: 1) identify priority conservation areas for protection; 2) site houses to avoid these resource areas and to maximize views and other marketable amenities; 3) lay out roads to minimize length (less natural disturbance and cost); and finally 4) draw lot lines. This approach differs from traditional "cluster" development because a creative working relationship among divergent groups, such as developers, planners, and conservation organizations, is established at the conceptual stage of the process. Early on, these groups try to address environmental concerns and offer innovative economic incentives to developers without a cumbersome review process. The result is a "neighborhood" design with smaller, more intimate lots surrounded by shared open spaces, which protects natural resources while encouraging residents to become more integrated into the community.

Essential to the project's success is an outreach program that includes the use of brochures, fact sheets, slide shows, and other associated education materials, as well as many workshops and forums. Even more important to the success is the extensive staff time commitment from local and state governments, regional planning agencies, conservation organizations, builders, engineers, and realtors. These professionals have donated many hours to meetings, review of technical documents, and submission of comments on both regulatory and nonregulatory tools in order to promote this innovative residential development strategy. This model is being transferred to other communities showing interest in learning about the innovative approach.
Contact: Massachusetts Audubon Society.

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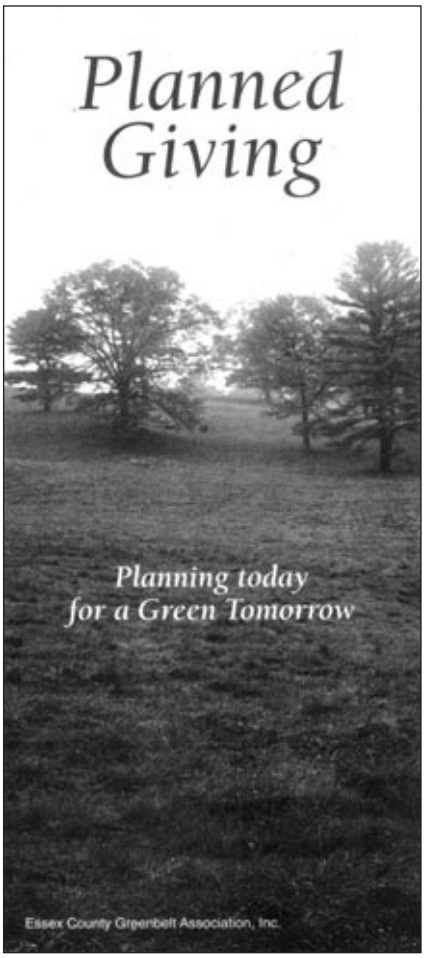
TECHNICAL ASSISTANCE AND INFORMATION SHARING

A Citizen's Guide to the Project Review and Approval Process

The Ipswich Department of Planning and Development produced an information guidebook (1999) to assist the public in understanding the process of obtaining necessary development permits in Ipswich. It summarizes the town's project review and approval process, defines the roles that each local regulatory board plays in that process, and sites the relevant sections of the town's bylaws to reference for more detailed information. By using the guidebook, the public may become more aware of the regulatory requirements, the permit process, and the need to address resource protection issues within permits and plans.
Contact: Ipswich Planning Board.



Brochures

Brochures target a large number of stakeholders, such as landowners, boaters, clammers, and recreational tourists who use and benefit from resources but who may not be aware of the large number of protection efforts underway. A well-targeted education and outreach campaign to these stakeholders will build support for resource protection. The Ipswich River Watershed Association has distributed brochures, including "How Animal Wastes Pollute Our Waters" and "A Resource Guide to Pasture and Manure Management." The Towns of Rowley and Ipswich have created brochures summarizing the purpose behind the Wetlands Protection Act and the Local Wetland By-laws and how they are implemented through the local conservation commissions. The Town of Ipswich Coastal Pollution Control Committee has distributed brochures to educate the public on sources of pollution to and protection mechanisms for the Ipswich River. The Essex County Greenbelt Association has put out an informational brochure entitled "Open Space in Essex County: Understanding the Fiscal and Economic Benefits for Your Community." These brochures have been and can be distributed through numerous avenues depending on the subject matter (e.g., when sending out dog tag license renewal forms or direct mailings to landowners within the ACEC boundary). Many stakeholders are on mailing list, so they can be effectively engaged with direct mailings if appropriate. These groups include, but are not limited to: commercial or recreational shellfishermen, lobstermen, recreational boaters, tourist-oriented businesses, seafood processing companies, coastal homeowners associations, municipal waterways and harbors staff, and boards and commissions.

Contact: Coastal Zone Management, North Shore Regional Office.

Newspaper Articles, Cable-Access Television, and Videos

Writing about the ACEC or natural resource issues in local newspapers is another way to reach the general public. By focusing articles on diverse topics, such as the importance of clamming, migratory fish, water quality, and recreational boating, the public can learn about the importance of these resources to the economy, environment, public health, and recreation in the region. Writing for local papers has shown to be an effective tool for public education.

The Ipswich Planning Board has a local cable program where they discuss every article on the warrant for upcoming town meetings. During this program, citizens can call and ask questions that better prepare themselves for town meeting. This format is a useful way to educate the public and advocate for resource protection in the ACEC.

The Eight Towns and the Bay Committee has produced a video about the Great Marsh entitled, *Voices of the Great Marsh*. This video is being distributed at a variety of locations including libraries, town halls, historical societies, and will be aired on local cable television. The video presents a historical and contemporary portrait of the Great Marsh through the voices of those who have worked to restore and protect if for future generations.

Contact: Coastal Zone Management, North Shore Regional Office; Ipswich Planning Department; Eight Towns and the Bay Committee.

Coastal Communities Toolbox

A collection of tools and resources available to coastal communities is highlighted in CZM's document entitled *Coastal communities toolbox: innovative strategies for addressing growth, water quality, and other environmental issues.* The report describes several models and programs designed to provide municipalities, their boards and commissions, and local volunteers with "real world" tested tools and

strategies for addressing coastal management issues. Four categories of CZM resource management programs are described: 1) planning for development, 2) water quality, 3) coastal access, and 4) special area management. The text provides guidance for implementing programs, lessons learned, as well as strategies for multi-disciplinary and multi-jurisdictional partnering. The document highlights local and regional partners active in resource management and the benefits of partnering for information sharing, technology transfer, and problem solving to help eliminate the adage, "I can't do this alone", and replace it with "we can do this together".

Ideally, users of this document include planners, conservation agents, health agents, volunteer boards and commissions, developers, regional agencies, and any other entity engaged in local and regional resource management issues and planning for growth. One unique feature is the inclusion of strategies aimed at teambuilding between traditionally adversarial parties such as developers and local regulatory bodies. Thus, the document is designed for wide circulation and accessibility to users with a wide range of skills and resources in coastal watersheds.

Contact: Coastal Zone Management, North Shore Regional Office.

Local Network Meetings

The CZM North Shore Regional Office facilitates several "network" meetings, which bring together members and administrators of similar boards and commissions for topic specific technical assistance, information sharing, and group problem solving. The conservation commission and health networks meet monthly for discussion, regulatory questions, and to receive information from a variety of sources including state agencies, environmental organizations, and private environmental consulting groups. In addition, CZM, Massachusetts Audubon, and the Essex County Greenbelt Association recently partnered to form an Open Space Committee Network that meets on a quarterly basis. Members of regional open space committees gather to discuss and receive technical assistance about issues concerning open space inventory, funding, and mapping. These network meetings have proven to be a successful way of educating municipal officials and volunteers about a variety of topics and have led to more effective decision making at the local level.

Contact: Coastal Zone Management, North Shore Regional Office.

ACEC Letter and Brochure Mailing

The Rowley Conservation Commission identified parcels and compiled an address list for landowners within the ACEC boundary. By working with the CZM North Shore Office, they then drafted a letter to send along with the ACEC brochure to these landowners. The letter identified threats to natural areas in the ACEC, discussed what it means to be living with the ACEC in their "backyard," and described the economic, ecological, and cultural significance of ACEC resources to the town. The goal of this mailing was to increase support of ACEC stewardship efforts and encourage appropriate management of these special areas.

Contact: Coastal Zone Management, North Shore Regional Office.

Great Marsh Natural Resource Mapping

The Great Marsh Land Protection Team has created a tool to help North Shore communities identify and prioritize areas for natural resource protection. As part of this process, natural resources in the Great Marsh and surrounding watersheds were illustrated in a series of three maps: 1) natural resources, 2) natural resource overlap, and 3) natural resource overlap and open space

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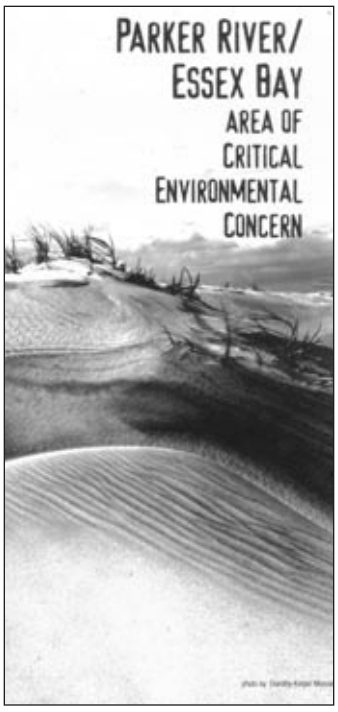

protection. The first two maps are used to locate important areas such as surface waters, wetlands, floodplains, forests, and wildlife habitats and to guide protection and restoration efforts by illustrating where these resource areas overlap. The third can be used to identify areas of high resource overlap that are within designated permanent or temporary protected open space. A set of "ecological guidelines" drafted by regional ecologists is included with each of the maps to help users think of ways to use and interpret the data to improve resource management both at a regional and local level. Ground-truthing at the local level will increase each map's accuracy and help add new information to regional, state, and federal databases. Since maps give people a sense of how local resources are part of a larger ecosystem, they can be displayed at a variety of public locations, meetings, and workshops to demonstrate how activities in one community can affect resources in neighboring towns.

Contact: Coastal Zone Management, North Shore Regional Office.